Frequency Converter

0.01 to 18 GHz

Extends Your VM-7 Capabilities to 18 GHz

The Frequency Converter Model 8852 is a device that is intended for use with the TEGAM Model VM-7 Attenuator and Signal Calibrator over the frequency band of .01 to 18 GHz. The 8852 extends the VM-7’s capabilities to measure devices at frequencies other than 30 MHz. Other features include:

- **Aux Output**
  This RF output supplies a 2 to 18 GHz synthesized continuous wave signal in 2 kHz steps at +7 dBm, which can be used as a signal source for other applications.

- **IEEE-488 Bus Programmable**
  The Model 8852 operational parameters are controlled over the IEEE-488 compatible bus using an external controller or an upgraded VM-7 with applicable software.

- **10 MHz Ref Input/Output**
  This instrument will either accept or provide a 10 MHz reference signal for system operation.

- **Rack Mounting**
  This instrument can be stacked easily with other TEGAM instruments or mounted in any cabinet or rack designed according to MIL-STD-189 or EIA RS-310 using the appropriate rack mounting kit (P/N 187-1007-1).

Weinschel PLANAR CROWN® Connector System

The use of Weinschel PLANAR CROWN® connectors at the two INPUT connectors provides the Model 8852 user with easy exchange of connector types and eliminates the need for adapters and other devices that would create additional insertion loss. This “Torque Free” type of connector also provides quick replacement of defective connectors. All crowns will mate nondestructively with connectors per MIL-STD-39012 (refer to Weinschel PLANAR CROWN® data sheet for more details).

System Operation

The Model 8852 can be easily configured into an attenuation measuring system with the addition of the TEGAM VM-7 and a signal source. This system is capable of performing attenuation measurements from 0.01 to 18 GHz. For detailed specifications and block diagrams of such a system, refer to the Model 8850 Attenuation Measurement System data sheet. The Frequency range can be extended even further to 40 GHz with the addition of the Model 8853 Frequency Converter.
# Model 8852

**Frequency Converter**

## Specifications

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<th>Specification</th>
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<th>High Band 2 GHz to 18 GHz</th>
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<td><strong>Input Frequency Range</strong></td>
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<tr>
<td>Low Band</td>
<td>10 MHz to 2 GHz</td>
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<tr>
<td>High Band</td>
<td>2 GHz to 18 GHz</td>
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<tr>
<td><strong>Frequency Resolution</strong></td>
<td>1 kHz from .01 to 2 GHz</td>
<td>2 kHz above 2 GHz</td>
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<tr>
<td><strong>Maximum Input Level</strong></td>
<td>+20 dBm</td>
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<td><strong>Nominal Impedance</strong></td>
<td>50 Ω</td>
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<tr>
<td><strong>Mixer Compression</strong></td>
<td>+1 dBm (1 dB compression)</td>
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<td><strong>SWR at RF Input Connector</strong></td>
<td>Low Band (0.01-2 GHz)</td>
<td>3.0 maximum</td>
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<tr>
<td></td>
<td>High Band (2-18 GHz)</td>
<td>3.0 maximum</td>
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<tr>
<td><strong>Conversion Gain (RF IN to 30 MHz)</strong></td>
<td>0 ±6 dBm nominal from 0.01 to 18 GHz</td>
<td>12 dB maximum</td>
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<td><strong>Noise Figure</strong></td>
<td>30 ± 2 MHz</td>
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<td><strong>Internal 10 MHz Reference Oscillator</strong></td>
<td>Frequency Stability ±1 ppm @ 0 to 50 ºC</td>
<td>Output Level 8 dBm ± 1 dBm</td>
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<tr>
<td><strong>External 10 MHz Reference Oscillator</strong></td>
<td>Input Impedance 50 Ω</td>
<td>Input Level 8 dBm ± 1 dBm</td>
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<tr>
<td><strong>Aux Output</strong></td>
<td>2 to 18 GHz, +7 ± 2.5 dBm</td>
<td></td>
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<td><strong>Operation</strong></td>
<td>IEEE-488 bus control or VM-7 Local mode (Note: only if the VM-7 I/O card has been upgraded with two bus ports and applicable software)</td>
<td></td>
</tr>
</tbody>
</table>

### Connectors

- **RF Inputs**: PLANAR CROWN (female Type N)
- **10 MHz External Input**: female BNC
- **10 MHz Output**: female BNC
- **30 MHz Output**: female Type-N
- **AUX Output**: female SMA
- **Digital Interface**: 24 pin IEEE-488

### Power Requirements

- **Input Power Requirements**: 100, 120, 220, 240 VAC ± 10 % @ 50 to 60 Hz
- **Power Consumption**: 180 Watts

### EMI

- **Design and Construction**: Designed to meet MIL-STD-461 for radiated emission and susceptibility.

### Environmental

- **Design and Construction**: Designed to meet requirements of MIL-STD-28800D TYPE III, CLASS 5, STYLE E
- **Operating Temperature**: 0 ºC to +50 ºC (+32 ºF to +122 ºF)
- **Storage Temperature**: -40 ºC to +75 ºC (-40 ºF to +167 ºF)
- **Humidity**: 95 %

### Physical Dimensions

- **Height**: 133.3 mm (5.21 in)
- **Width**: 426.7 mm (16.8 in)
- **Depth**: 619.8 mm (24.4 in)
- **Weight**: 27.2 kg (65 lb)

### Included Accessories

- **Power Cord**: P/N 068-21
- **Manual**: P/N IM212
- **GPIB/IEEE-488 Cable (1 Meter Long)**: P/N 1583-3
- **8852 to VM-7 inter-connect cable, coaxial**: P/N 192-1030

### Optional Accessories

- **Rack Mount Kit for 8852**: P/N 187-1007-1
- **SureCAL Software**: P/N 8850-SURECAL
- **Measurement Accessory Kit**: P/N 187-4001
- **SWR/Retrun Loss Measurement Kit**: P/N 187-4003
- **Z540 Compliant Calibration with Certificate and Data for 8852**: P/N OPT-Z540
- **A2LA Accredited ISO/IEC 17025:1999 Compliant Calibration for 8852**: P/N OPT-A2LA

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